

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	UPDATED PER VDOT MARKUPS PROJECTION NOTE HH DIM BP NOTE ADDED TORQUE SPEC	10/12/2020	TK
B	REVISED HH TO MATCH VDOT STDS, ADDED OPTIONAL LARGE FRAME FOR TERMINAL COMPARTMENT	6/8/2021	RK
C	REPLACED MAST ARM HARDWARE WITH RO-CAP ASSY HARDWARE	7/28/2021	RK

MATERIAL SPECIFICATIONS	
POST:	ASTM A572 GR 55
BASE PLATE:	ASTM A709 GR 36
MAST ARM:	ASTM A572 GR55
MOUNTING PLATE:	ASTM A572 GR36
LUMINAIRE ARM:	
HARDWARE FINISH:	ASTM A153
ANCHOR BOLTS:	F1554 GR 55
SIZE:	2"

DESIGN CRITERIA	
2013 W/2015 INTERIM REVISIONS AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS ON HIGHWAY SIGNS, LUMINAIRES & TRAFFIC SIGNALS.	
WINDS: 80 MPH	APPENDIX C: YES
FATIGUE CAT: N/A	VORTEX SHED: N/A
NATURAL WIND GUST: N/A	GALLOPING: N/A
	TRUCK GUST: N/A

WELD SPECIFICATION	
THE POST AND MAST ARM TO BE A TAPERED TUBE FABRICATION WITH ONE SUBMERGED ARC LONGITUDINAL SEAM WELD WITH 100% PENETRATION 6" FROM BASE PLATE AND 60% FOR REMAINDER. GAS METAL ARC WELDING PROCESS WITH 60% PENETRATION MAY BE USED FOR REMAINDER OF WELDED FABRICATION.	
WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT > 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).	

FINISH SPECIFICATION	
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123	
FINISH COAT:	
COLOR:	
FEDERAL OR RAL SPEC.:	
WEIGHT W/GALV.:	
WEIGHT W/GALV.&PAINT:	
WEIGHT W/PAINT:	
SURFACE AREA:	
GAL. OF PAINT:	

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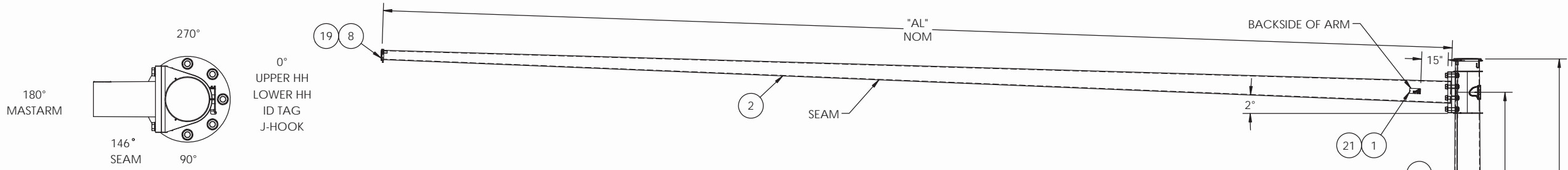
SALES ORDER NO.:	QTY:	STATE:	SHEET
		VA	1 OF 2

DESCRIPTION: MP3 POLE TYPE A & D
30" THRU 49" MASTARMS 80 MPH
STANDARD QPL DESIGN

EST. WEIGHT: DRAWING NO:
VA8SA-49A(D)

PROJECT NAME:
PROJECT LOCATION:

DWN BY: REBEKAH	DATE: 04-29-2020
CHK BY:	DATE:



PROJECT:	
MFG:	MMC SO#
MFG DATE:	
POLE NUMBER:	
MAST ARM SIGNAL POLE TYPE	
POST:	GA / DIA / FT /
MASTARM S1:	GA / DIA / FT /
S2:	GA / DIA / FT /
MIN YIELD: (A)	55 (BP) 36 (P) 55 (ARM) 55
ANCHOR BOLTS	
ASTM	F1554 GR/ 55 DIA/ 2" LG 66"

VIRGINIA DEPARTMENT OF TRANSPORTATION
C.O. STRUCTURE AND BRIDGE
REVIEW OF WORKING DRAWINGS

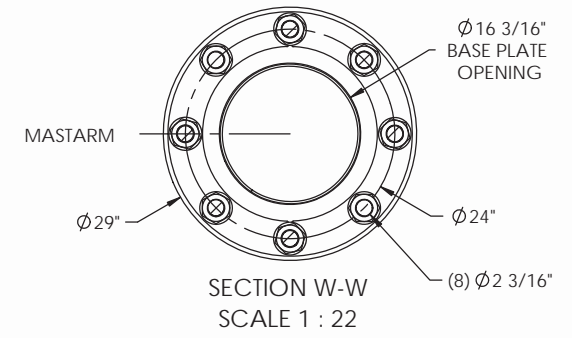
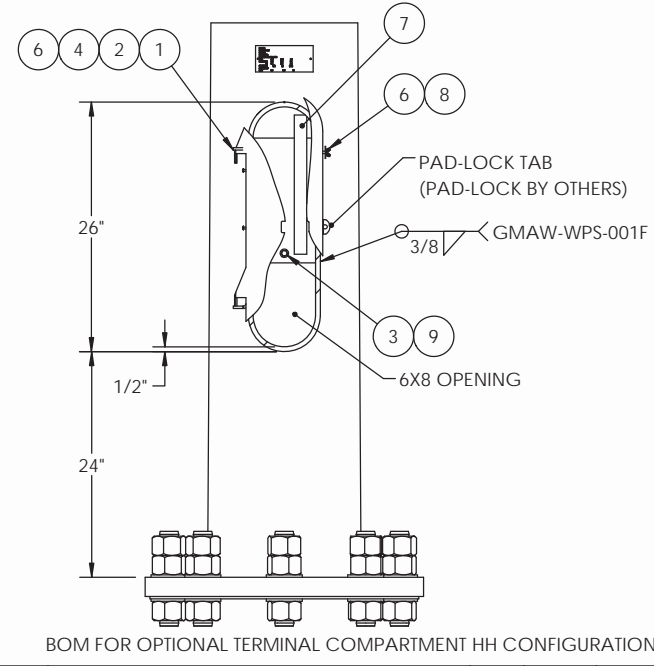
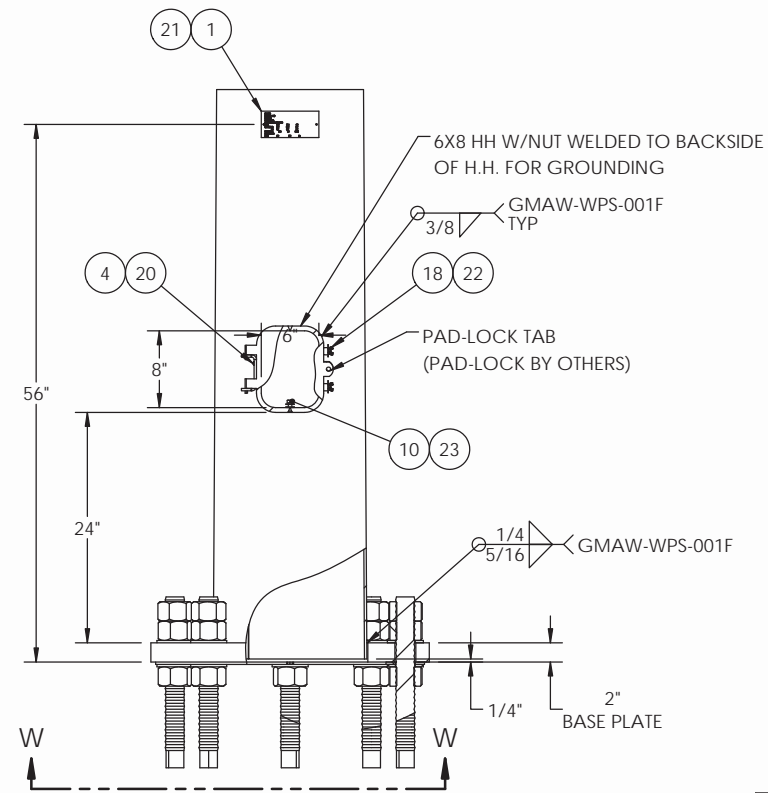
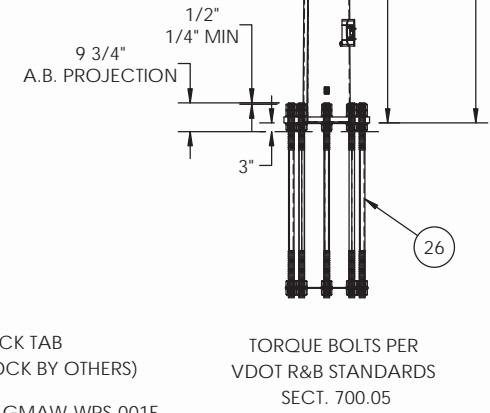
Working drawings have been reviewed in accordance with Section 105.10 of the Specifications with the following comments.

Reviewed Revise and Resubmit
 Reviewed as Noted

Reviewed by: Karl Larson 10/19/2021



10-4-21



ITEM NO.	DESCRIPTION	QTY PER	ASSY	FINISH
1	ID TAG VA DOT	2	X	
2	WLDMT ARM SIG RD	1		X
3	COVER 14 x 16 HANDHOLE	1	X	X
4	BENT HANDHOLE HINGE	1	X	X
5	WLDMNT POLE SIG RD	1		X
6	COVER HH M16 4X6	1	X	
7	LATCH HH M16 4X6	1	X	
8	STAMPED POLE CAP WELDMENT	1		X
9	STAMPED POLE CAP WELDMENT	1		X
10	BOLT HX HD 3/8-16NC X 1" F593C SS	1	X	
11	ASSY RCP BOLT 1 1/2X6 1/2" A325GV W/NUT HVYHX A563 & FLWSH-WSH-LD GV	8		
12	CHAIN 1/8"PROOF COIL CHAIN GV 12"LG	1	X	
13	STICKER-TITE NEOPRENE GASKET 1/2x1/8	2	X	
14	1"ID,1-3/4OD,5/8TKw/GRV 1/4/1.38GVD	5		NOT SHOWN
15	PLUG NON THREADED K-8 CAPPLUG	8	X	
16	RIVET POP 3/16X1-1/8X5/8 HD ALUM	1	X	
17	SCRWA HX SK FL HD 5-16-18NC X 3 SS	1	X	
18	WING SCREW 1/4-20X3/4 ZINC	2	X	
19	SCRW ST SQ HD 1-4-20NC X 1 1-4 SS	6		
20	SCRW HX SK BT HD 10-24NC X 5-8 SS	2	X	
21	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	4	X	
22	WASHER FLAT 1/4 SS FENDER WASHER	2	X	
23	WASHFLAT3-8BRASS-001	2	X	
24	ANCHOR BOLT CLUSTER (8) 2" X 66" BOLTS ON 24" BC	1		

ID TAGS LOCATED ON BACKSIDE OF ARMS

TORQUE BOLTS PER VDOT R&B STANDARDS SECT. 700.05

BOM FOR OPTIONAL TERMINAL COMPARTMENT HH CONFIGURATION

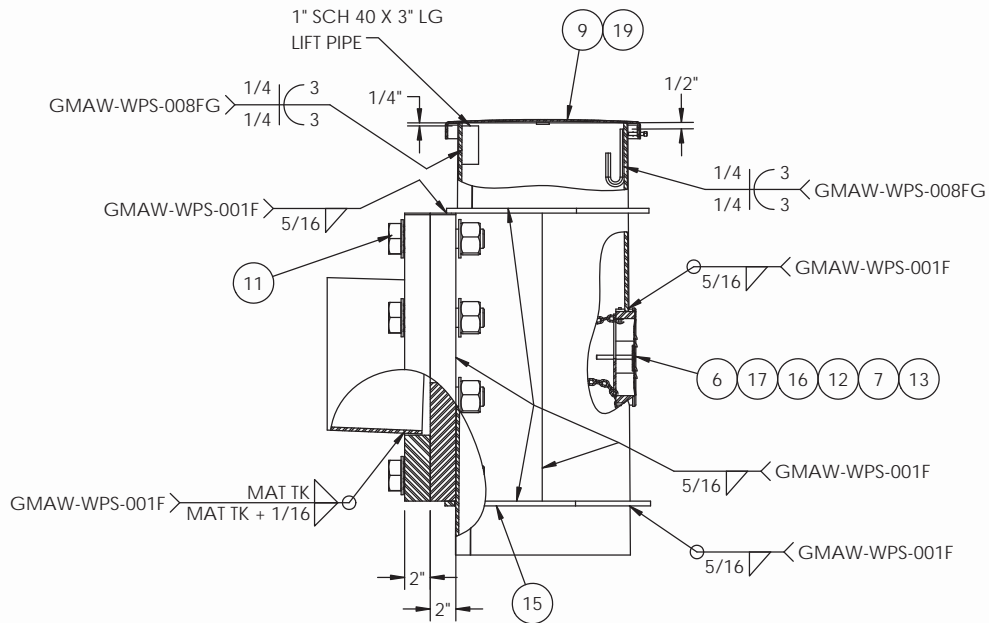
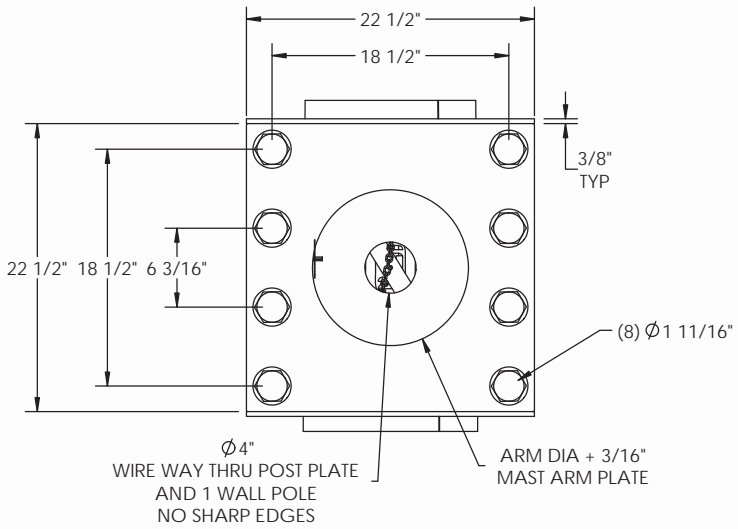
ITEM NO.	DESCRIPTION	QTY PER	ASSY	FINISH
1	HINGE BENT HH 6 1/2 X 25	1	X	X
2	WELDMNT COVER 8X28 HANDHOLE	1	X	X
3	BOLT HX HD 3/8-16NC X 1" F593C SS	1	X	
4	STICKER-TITE NEOPRENE GASKET 1/2x1/8	2	X	
5	WING SCREW 1/4-20X3/4 ZINC	2	X	
6	SCRW HX SK BT HD 10-24NC X 5-8 SS	3	X	
7	TERMINAL STRIP PROVIDED BY OTHERS	1		REF ONLY
8	WASHER FLAT 1/4 SS FENDER WASHER	2	X	
9	WASHFLAT3-8BRASS-001	2	X	

POLE DATA		
POLE TYPE	"PH" POLE HEIGHT	POLE SIZE
A	19'-6"	1/4 X 16.0 X 13.27 X 19'-6"
D	25'-0"	1/4 X 16.0 X 12.50 X 25'-0"

LOWER HH CONFIGURATION
6X8 HINGED
TERMINAL COMPARTMENT FRAME

MAST ARM DATA	
"AL" ARM LENGTH	ARM SIZE
30'-0"	3/16 X 10.0 X 5.80 X 30'-0"
40'-0"	1/4 X 10.0 X 4.40 X 40'-0"
49'-0"	1/4 X 12.0 X 5.14 X 49'-0"

ORDER CONFIGURATION			
QTY	POLE TYPE	HH CONFIGURATION	AL ARM LENGTH



VIRGINIA DEPARTMENT OF TRANSPORTATION
C.O. STRUCTURE AND BRIDGE
REVIEW OF WORKING DRAWINGS

Working drawings have been reviewed in accordance with Section 105.10 of the Specifications with the following comments.

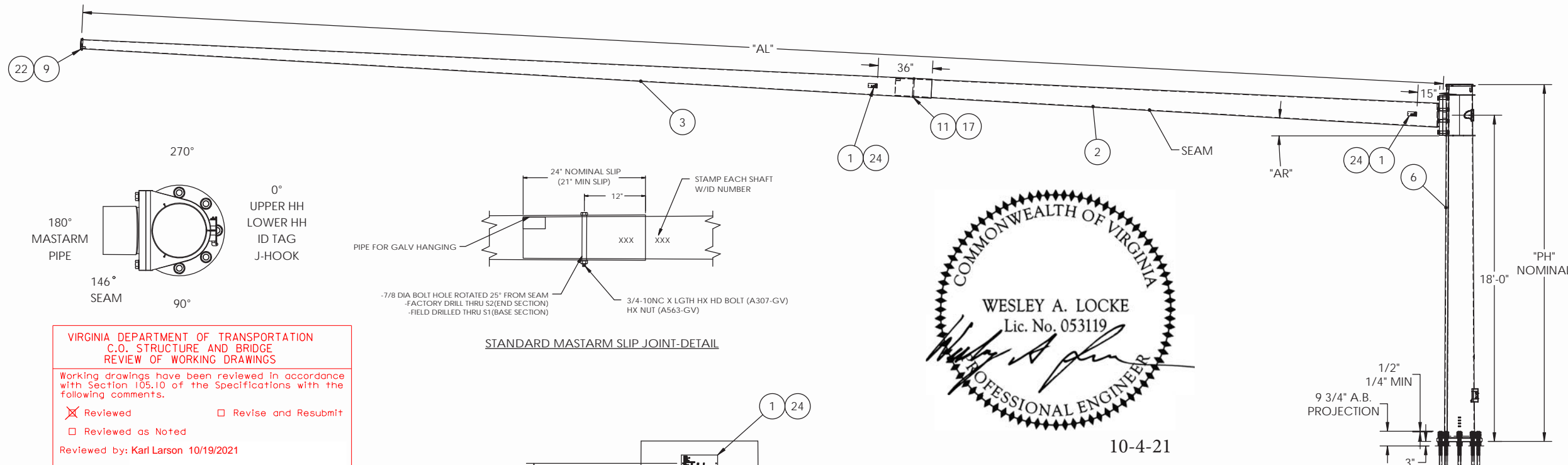
Reviewed Revise and Resubmit
 Reviewed as Noted

Reviewed by: Karl Larson 10/19/2021



10-4-21

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SALES ORDER NO.:	QTY:	STATE:	SHEET
		VA	2 OF 2
DESCRIPTION: MP3 POLE TYPE A & D 30' THRU 49' MASTARMS 80 MPH			
EST. WEIGHT: 3304.3	DRAWING NO: VA8SA-49A(D)		
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY: REBEKAH	DATE: 04-29-2020		
CHK BY:	DATE:		



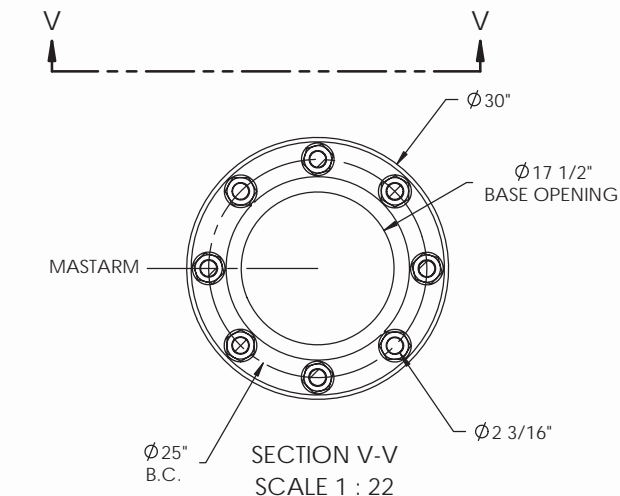
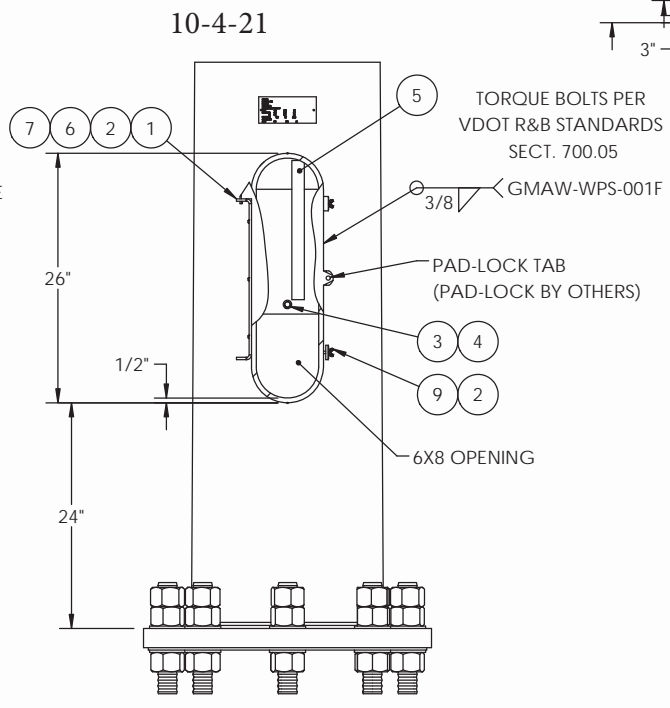
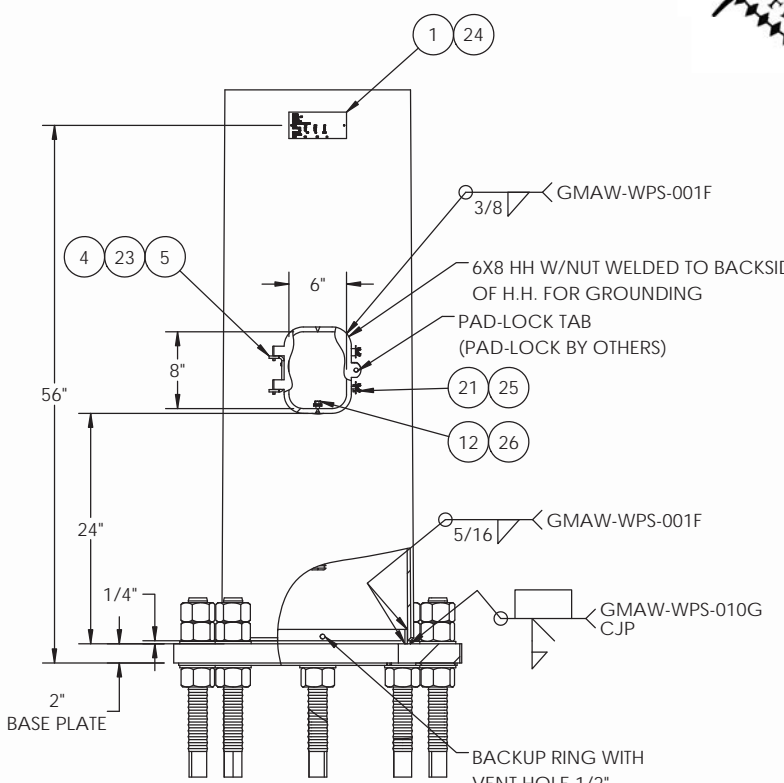
**VIRGINIA DEPARTMENT OF TRANSPORTATION
C.O. STRUCTURE AND BRIDGE
REVIEW OF WORKING DRAWINGS**

Working drawings have been reviewed in accordance with Section 105.10 of the Specifications with the following comments.

Reviewed Revise and Resubmit
 Reviewed as Noted

Reviewed by: Karl Larson 10/19/2021

STANDARD MASTARM SLIP JOINT-DETAIL



BOM FOR OPTIONAL TERMINAL COMPARTMENT HH CONFIGURATION

ITEM NO.	DESCRIPTION	QTY PER	ASSY	FINISH
1	HINGE BENT HH 6 1/2 X 25	1	X	X
2	COVER HH 7 1/2 X 25	1	X	X
3	BOLT HX HD 3/8-16NC X 1" F593C SS	1	X	
4	WASHFLAT3-8BRASS-001	2	X	
5	TERMINAL STRIP PROVIDED BY OTHERS	1	BY OTHERS	
6	SCRW HX SK BT HD 10-24NC X 5-8 SS	3	X	
7	STICKER-TITE NEOPRENE GASKET 1/2x1/8	1	X	
8	WASHER FLAT 1/4 SS FENDER WASHER	2	X	
9	WING SCREW 1/4-20X3/4 ZINC	2	X	

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	UPDATED PER VDOT MARKUPS PROJECTION NOTE HH DIM BP NOTE ADDED TORQUE SPEC	10/12/2020	TK
B	REVISED HH TO MATCH VDOT STDS, ADDED OPTIONAL LARGE FRAME FOR TERMINAL COMPARTMENT	6/8/2021	RK
C	REPLACED MAST ARM HARDWARE WITH RO-CAP ASSY HARDWARE	7/28/2021	RK

MATERIAL SPECIFICATIONS	
POST: ASTM A572 GR 55	
BASE PLATE: ASTM A709 GR 36	
MAST ARM: ASTM A572 GR55	
MOUNTING PLATE: ASTM A572 GR36	
LUMINAIRE ARM:	
HARDWARE FINISH: ASTM A153	
ANCHOR BOLTS: F1554 GR 55	SIZE: 2"

DESIGN CRITERIA	
2013 W/2015 INTERIM REVISIONS AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS ON HIGHWAY SIGNS, LUMINAIRES & TRAFFIC SIGNALS.	
APPENDIX C: YES	VORTEX SHED: N/A
WINDS: 80 MPH 1.3	FATIGUE CAT: 2
NATURAL WIND GUST: YES	TRUCK GUST: N/A

WELD SPECIFICATION	
THE POST AND MAST ARM TO BE A TAPERED TUBE FABRICATION WITH ONE SUBMERGED ARC LONGITUDINAL SEAM WELD WITH 100% PENETRATION 6" FROM BASE PLATE AND 60% FOR REMAINDER. GAS METAL ARC WELDING PROCESS WITH 60% PENETRATION MAY BE USED FOR REMAINDER OF WELDED FABRICATION.	
WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS.	
< 6MM (0.25 IN) MT	> 6MM (0.25 IN) UT
A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).	

FINISH SPECIFICATION	
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123	
FINISH COAT:	
COLOR:	
FEDERAL OR RAL SPEC.:	
WEIGHT W/GALV.:	
WEIGHT W/GALV.&PAINT:	
WEIGHT W/PAINT:	
SURFACE AREA:	
GAL. OF PAINT:	

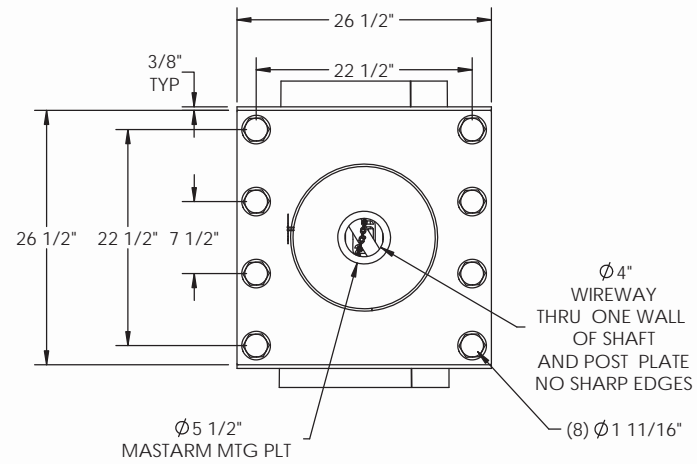
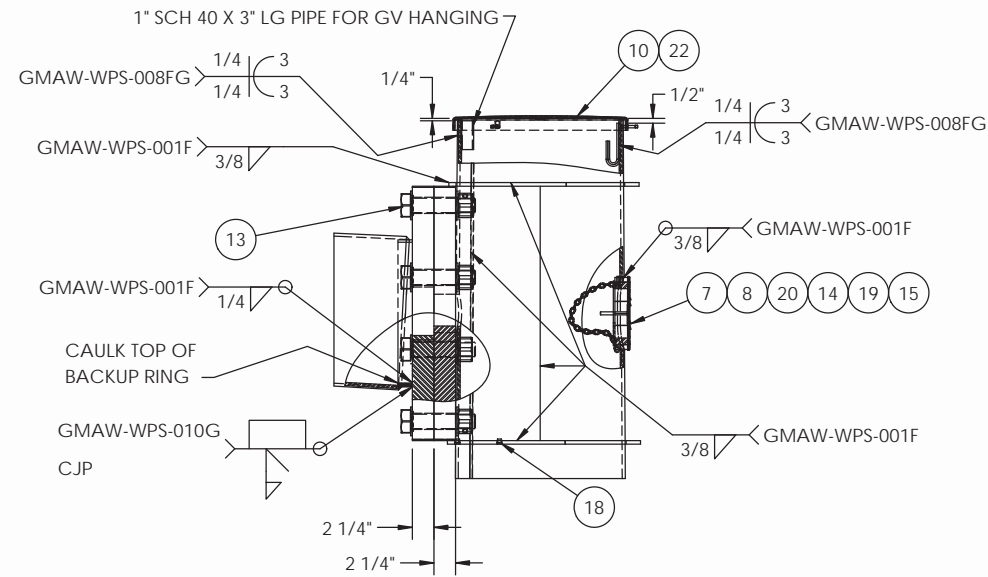
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SALES ORDER NO.:	QTY:	STATE:	SHEET
		VA	1 OF 2

DESCRIPTION:	MP3 POLE TYPE B1 & E1 60' THRU 75' ARM 80 MPH STANDARD OPL DESIGN
EST. WEIGHT:	DRAWING NO: VA8SA-75B1(E1)

PROJECT NAME:	
---------------	--

PROJECT LOCATION:	
DWN BY: REBEKAH	DATE: 04-30-2020
CHK BY:	DATE:



VIRGINIA DEPARTMENT OF TRANSPORTATION
C.O. STRUCTURE AND BRIDGE
REVIEW OF WORKING DRAWINGS

Working drawings have been reviewed in accordance with Section 105.10 of the Specifications with the following comments.

Reviewed Revise and Resubmit
 Reviewed as Noted

Reviewed by: Karl Larson 10/19/2021



10-4-21

PROJECT:			
MFG: MMC SO#			
MFG DATE:			
POLE NUMBER:			
MAST ARM SIGNAL POLE TYPE			
POST:	GA/	DIA/	FT/
MASTARM: S1:	GA/	DIA/	FT/
S2:	GA/	DIA/	FT/
MIN YEILD: (A)	55 (BP)	36 (P)	55 (ARM) 55
ANCHOR BOLTS			
ASTM	F1554	GR/	55 DIA/ 2" LG 66"

ID TAGS LOCATED ON BACKSIDE OF ARMS

POLE DATA		
POLE TYPE	"PH" POLE HEIGHT	POLE SIZE
B1	19'-6"	5/16 X 20.0 X 17.27 X 19'-6"
E1	25'-0"	5/16 X 20.0 X 16.50 X 25'-0"

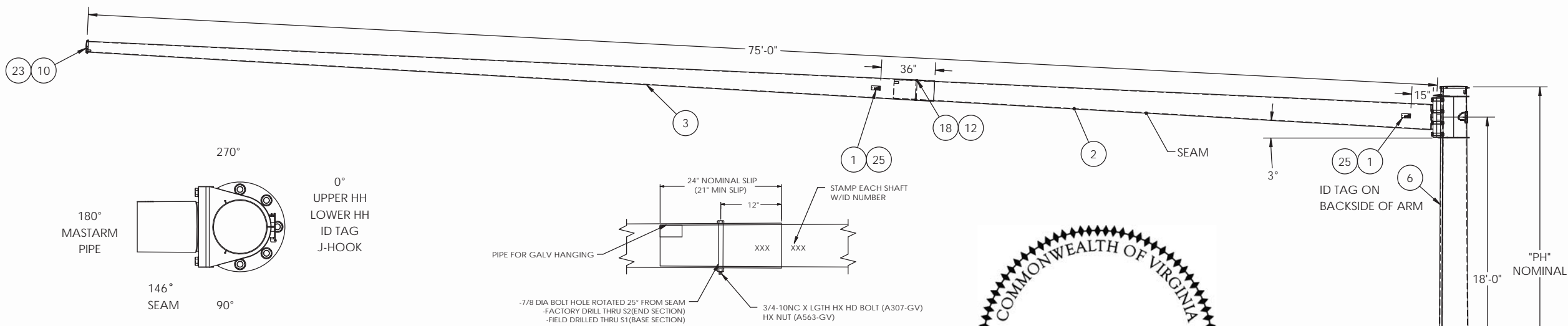
LOWER HH CONFIGURATION
6X8 HINGED
TERMINAL COMPARTMENT FRAME

MAST ARM DATA			
"AL" ARM LENGTH	S1 ARM SIZE	S2 ARM SIZE	"AR" ARM RISE
60'-0"	1/4 X 15.0 X 12.20 X 20'-0"	3/16 X 13.11 X 7.23 X 42'-0"	2°
65'-0"	1/4 X 16.0 X 13.20 X 20'-0"	3/16 X 14.11 X 7.53 X 47'-0"	2°
70'-0"	5/16 X 15.0 X 10.80 X 30'-0"	3/16 X 11.71 X 5.83 X 42'-0"	3°
75'-0"	5/16 X 16.0 X 11.80 X 30'-0"	3/16 X 12.71 X 6.13 X 47'-0"	3°

MASTARMS 50' THRU 59' WILL BE A 60' DESIGN CUT S2 CUT TO LENGTH AS REQUIRED

ORDER CONFIGURATION			
QTY	POLE TYPE	HH CONFIGURATION	AL ARM LENGTH

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SALES ORDER NO.:	QTY:	STATE:	SHEET
		VA	2 OF 2
DESCRIPTION: MP3 POLE TYPE B1 & E1 60' THRU 75' ARM 80 MPH			
EST. WEIGHT: 5308.0		DRAWING NO: VA8SA-75B1(E1)	
PROJECT NAME:			
PROJECT LOCATION:			
DWN BY: REBEKAH		DATE: 04-30-2020	
CHK BY:		DATE:	

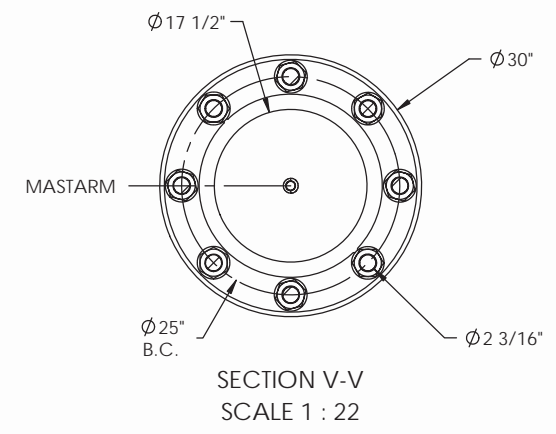
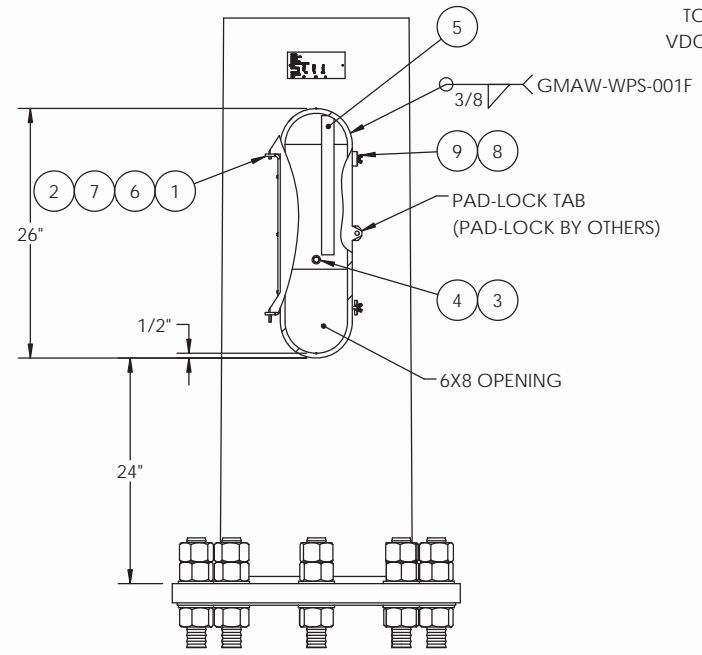
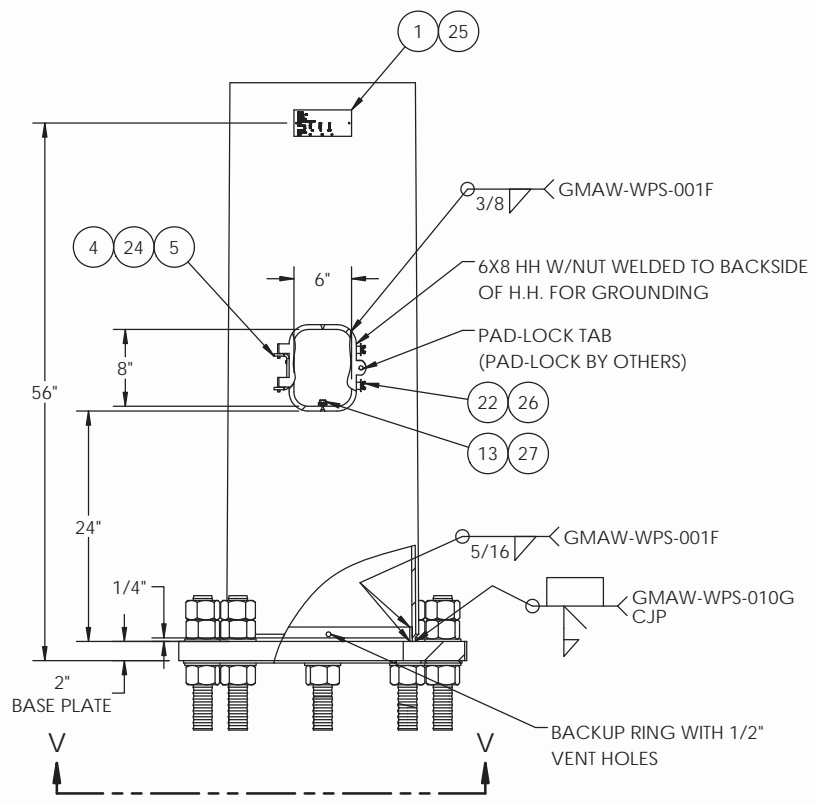
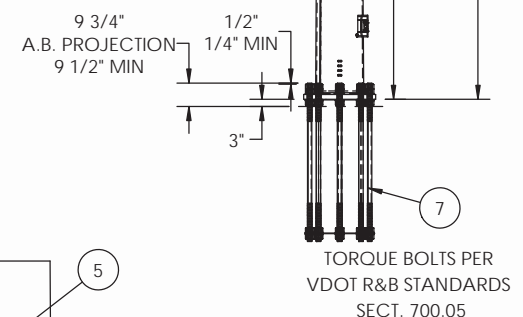
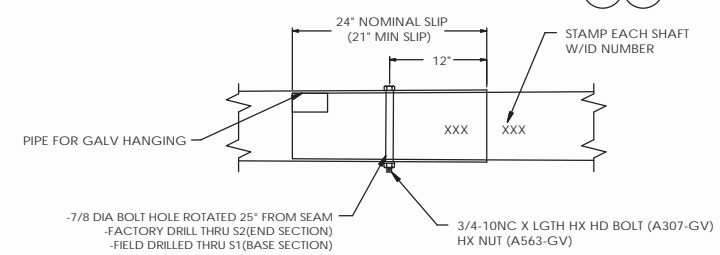


VIRGINIA DEPARTMENT OF TRANSPORTATION
C.O. STRUCTURE AND BRIDGE
REVIEW OF WORKING DRAWINGS

Working drawings have been reviewed in accordance with Section 105.10 of the Specifications with the following comments.

Reviewed Revise and Resubmit
 Reviewed as Noted

Reviewed by: Karl Larson 10/19/2021



ITEM NO.	DESCRIPTION	QTY PER	ASSY	FINISH
1	HINGE BENT HH 6 1/2 X 25	1	X	X
2	COVER HH 7 1/2 X 25	1	X	X
3	BOLT HX HD 3/8-16NC X 1" F593C SS	1	X	
4	WASHFLAT3-8BRASS-001	2	X	
5	TERMINAL STRIP PROVIDED BY OTHERS	1		REF ONLY
6	SCRW HX SK BT HD 10-24NC X 5-8 SS	3	X	
7	STICKER-TITE NEOPRENE GASKET 1/2x1/8	1	X	
8	WASHER FLAT 1/4 SS FENDER WASHER	2	X	
9	WING SCREW 1/4-20X3/4 ZINC	2	X	

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	UPDATED PER VDOT MARKUPS PROJECTION NOTE HH DIM BP NOTE ADDED TORQUE SPEC	10/12/2020	TK
B	REVISEDHH TO MATCH VDOT STDS, ADDED OPTIONAL LARGE FRAME FOR TERMINAL COMPARTMENT	6/8/2021	RK
C	REPLACED MAST ARM HARDWARE WITH RO-CAP ASSY HARDWARE	7/28/2021	RK

MATERIAL SPECIFICATIONS	
POST: ASTM A572 GR 55	
BASE PLATE: ASTM A709 GR 36	
MAST ARM: ASTM A572 GR55	
MOUNTING PLATE: ASTM A572 GR36	
LUMINAIRE ARM:	
HARDWARE FINISH: ASTM A153	
ANCHOR BOLTS: F1554 GR 55	SIZE: 2"

DESIGN CRITERIA	
2013 W/2015 INTERIM REVISIONS AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS ON HIGHWAY SIGNS, LUMINAIRES & TRAFFIC SIGNALS.	
APPENDIX C: YES	
WINDS: 80 MPH 1.3	VORTEX SHED: N/A
FATIGUE CAT: 2	GALLOPING: N/A
NATURAL WIND GUST: YES	TRUCK GUST: N/A

WELD SPECIFICATION	
THE POST AND MAST ARM TO BE A TAPERED TUBE FABRICATION WITH ONE SUBMERGED ARC LONGITUDINAL SEAM WELD WITH 100% PENETRATION 6" FROM BASE PLATE AND 60% FOR REMAINDER. GAS METAL ARC WELDING PROCESS WITH 60% PENETRATION MAY BE USED FOR REMAINDER OF WELDED FABRICATION.	
WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS.	
< 6MM (0.25 IN) MT	
> 6MM (0.25 IN) UT	
A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).	

FINISH SPECIFICATION	
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123	
FINISH COAT:	
COLOR:	
FEDERAL OR RAL SPEC.:	
WEIGHT W/GALV.:	
WEIGHT W/GALV.&PAINT:	
WEIGHT W/PAINT:	
SURFACE AREA:	
GAL. OF PAINT:	

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SALES ORDER NO.:	QTY:	STATE:	SHEET
		VA	1 OF 2

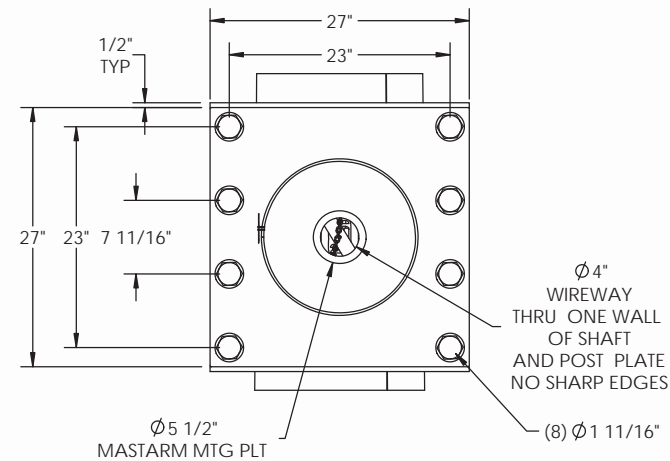
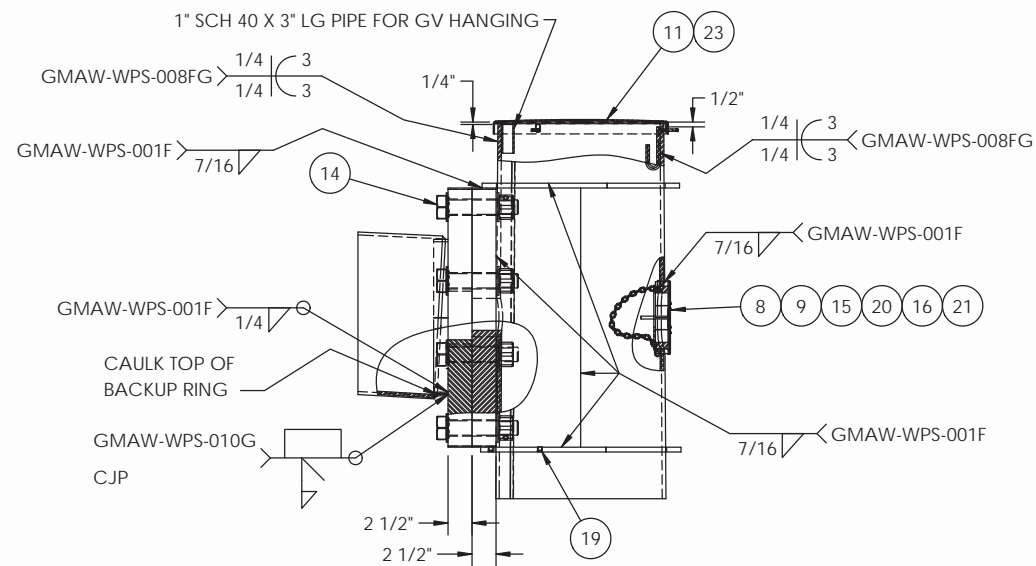
DESCRIPTION: MP3 POLE TYPE B2 & E2
75' ARM 80 MPH
STANDARD OPL DESIGN

EST. WEIGHT: DRAWING NO:
VA8SA-75B2(E2)

PROJECT NAME:
PROJECT LOCATION:

DWN BY: REBEKAH	DATE: 04-30-2020
CHK BY:	DATE:

ITEM NO.	DESCRIPTION	QTY PER	ASSY	FINISH
1	ID TAG VA DOT	3	X	
2	WLDMT ARM SIG RD S1 5/16X30'-0" (5/16X17X12.8X30'-0")	1		X
3	WLDMT ARM SIG RD S2 1/4X47'-3 (1/4X13.87X7.25X47'-3)	1		X
4	COVER 14 x 16 HANDHOLE	1		X
5	BENT HANDHOLE HINGE	1		
6	WLDMNT POLE SIG RD	1		X
7	ANCHOR BOLT CLUSTER (8) 2" X 66" BOLTS ON 25" BC	1		
8	COVER HH M16 4X6	1	X	X
9	LATCH HH M16 4X6	1	X	
10	STAMPED POLE CAP WELDMNT	1		X
11	STAMPED POLE CAP WELDMNT	1		X
12	BOLT HX HD 3/4-10NC X 14-1/2" A307 GV	1		
13	BOLT HX HD 3/8-16NC X 1" F593C SS	1	X	
14	ASSY RCP BOLT 1 1/2X7 1/2" A325GV W/NUT HVYHX A563 & FLWSH-WSH-LD GV	8		
15	CHAIN 1/8"PROOF COIL CHAIN GV 12"LG	1	X	
16	STICKER-TITE NEOPRENE GASKET 1/2x1/8	2	X	
17	1"ID,1-3/4OD,5/8TKw/GRV 1/4/1.38GVD	4		
18	NUT HX 3-4-10NC G5 GV	1		
19	PLUG NON THREADED K-8 CAPLUG	8	X	
20	RIVET POP 3/16X1-1/8X5/8 HD ALUM	1	X	
21	SCRWA HX SK FL HD 5-16-18NC X 3 SS	1	X	
22	WING SCREW 1/4-20X3/4 ZINC	2	X	
23	SCRW ST SQ HD 1-4-20NC X 1 1-4 SS	6		
24	SCRW HX SK BT HD 10-24NC X 5-8 SS	2	X	
25	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	6	X	
26	WASHER FLAT 1/4 SS FENDER WASHER	2	X	
27	WASHFLAT3-8BRASS-001	2	X	



PROJECT:					
MFG: MMC SO#					
MFG DATE:					
POLE NUMBER:					
MAST ARM SIGNAL POLE TYPE					
POST:	GA/	DIA/	FT/		
MASTARM: S1:	GA/	DIA/	FT/		
S2:	GA/	DIA/	FT/		
MIN YIELD: (A)	55 (BP)	36 (P)	55 (ARM)	55	
ANCHOR BOLTS					
ASTM	F1554	GRV	55	DIA	2" LG 66"

ID TAG



10-4-21

VIRGINIA DEPARTMENT OF TRANSPORTATION
C.O. STRUCTURE AND BRIDGE
REVIEW OF WORKING DRAWINGS

Working drawings have been reviewed in accordance with Section 105.10 of the Specifications with the following comments.

Reviewed Revise and Resubmit
 Reviewed as Noted

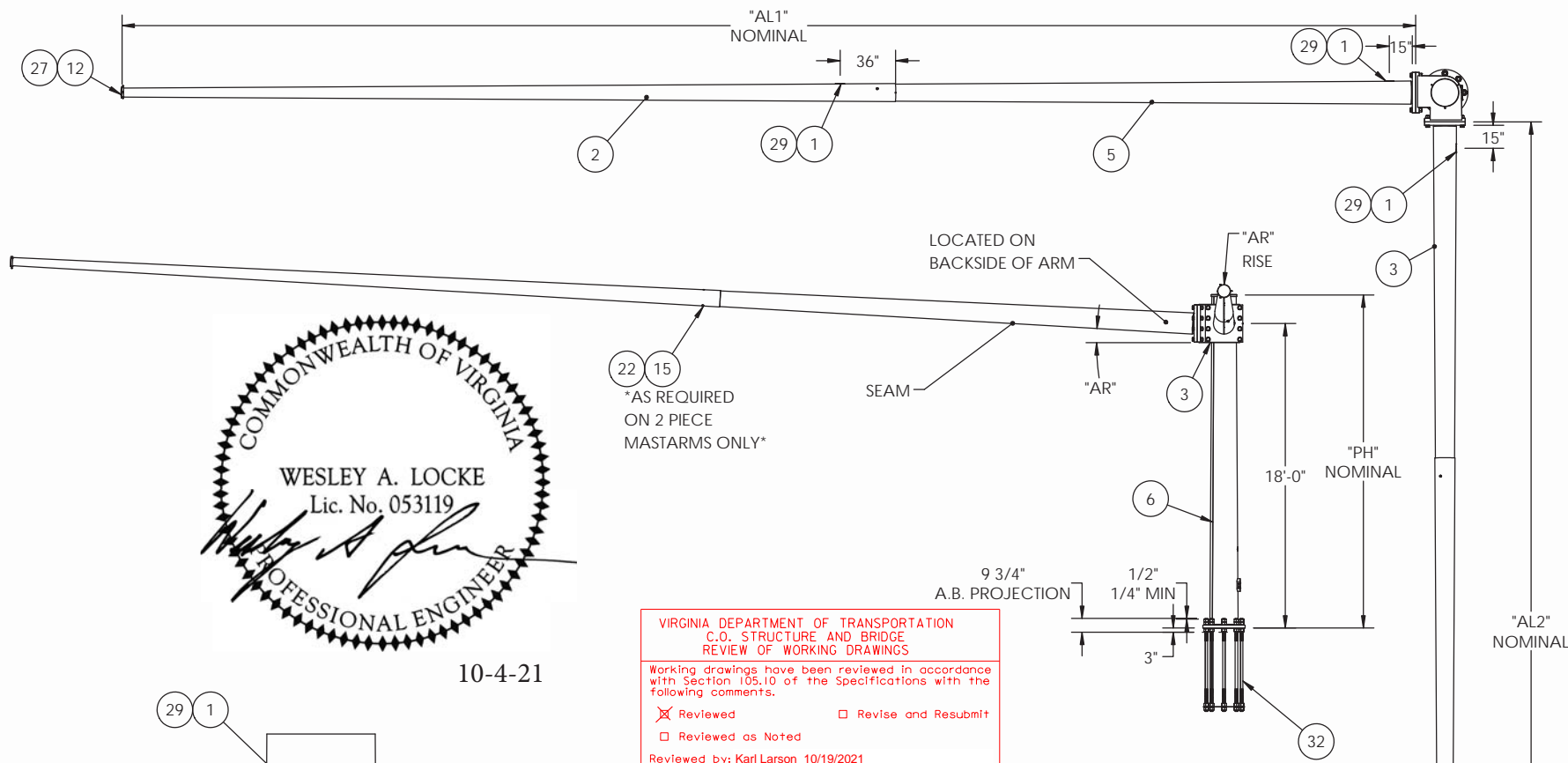
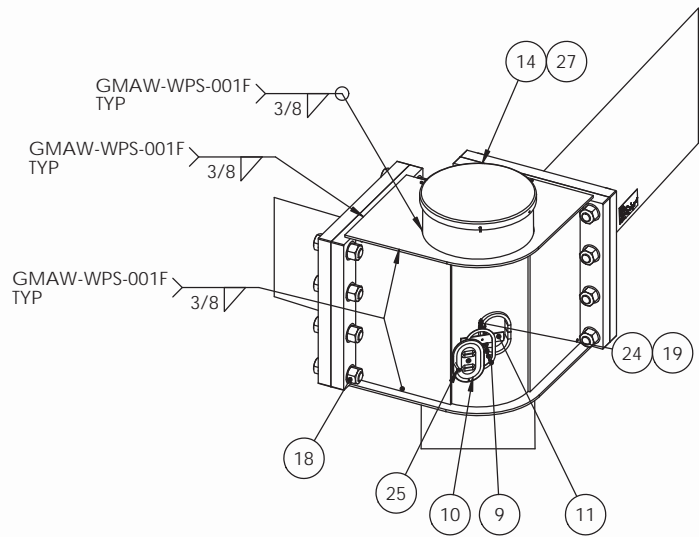
Reviewed by: Karl Larson 10/19/2021

POLE DATA		
POLE TYPE	"PH" POLE HEIGHT	POLE SIZE
B2	19'-6"	3/8 X 20.0 X 17.27 X 19'-6"
E2	25'-0"	3/8 X 20.0 X 16.50 X 25'-0"

LOWER HH CONFIGURATION
6X8 HINGED
TERMINAL COMPARTMENT FRAME

ORDER CONFIGURATION		
QTY	POLE TYPE	HH CONFIGURATION

				622 6TH ST. SO. WINSTED, MN 55395	
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SALES ORDER NO.:	QTY:	STATE:	SHEET		
		VA	2 OF 2		
DESCRIPTION: MP3 POLE TYPE B2 & E2 75' ARM 80 MPH					
EST. WEIGHT: 6226.1			DRAWING NO: VA8SA-75B2(E2)		
PROJECT NAME:					
PROJECT LOCATION:					
DWN BY: REBEKAH			DATE: 04-30-2020		
CHK BY:			DATE:		



10-4-21

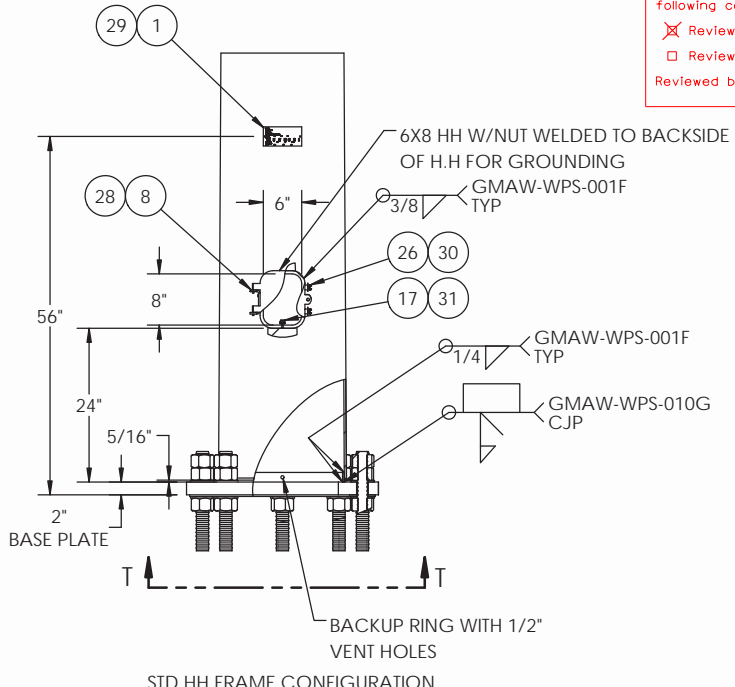
VIRGINIA DEPARTMENT OF TRANSPORTATION
C.O. STRUCTURE AND BRIDGE
REVIEW OF WORKING DRAWINGS

Working drawings have been reviewed in accordance with Section 105.10 of the Specifications with the following comments:

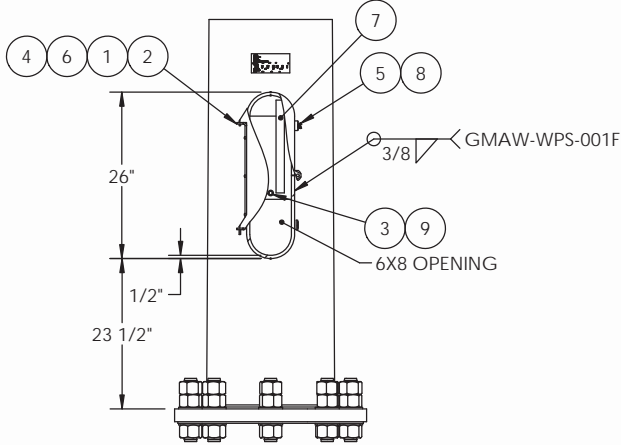
Reviewed Revise and Resubmit

Reviewed as Noted

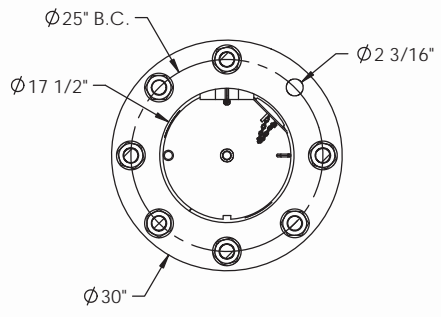
Reviewed by: Karl Larson 10/19/2021



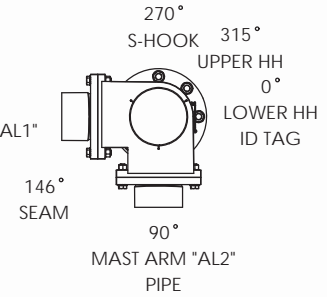
STD HH FRAME CONFIGURATION



BOM FOR OPTIONAL TERMINAL COMPARTMENT HH CONFIGURATION



SECTION T-T
SCALE 1 : 25



ITEM NO.	DESCRIPTION	QTY PER	ASSY	FINISH
1	COVER HH 7 1/2 X 25	1	X	X
2	HINGE BENT HH 6 1/2 X 25	1	X	X
3	BOLT HX HD 3-8-16NC X 3-4 F593C SS	1	X	
4	STICKER-TITE SPONGE GASKET 1/2x1/8	1	X	
5	WING SCREW 1/4-20X3/4 ZINC	2	X	
6	SCRW HX SK BT HD 10-24NC X 5-8 SS	3	X	
7	TERMINAL STRIP PROVIDED BY OTHERS	1	REF ONLY	
8	WASHER FLAT 1/4 SS FENDER WASHER	2	X	
9	WASHFLAT3-8BRASS-001	2	X	

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	UPDATED PER VDOT MARKUPS PROJECTION NOTE HH DIM BP NOTE ADDED TORQUE SPEC	10/12/2020	TK
B	REVISED HH TO MATCH VDOT STDS, ADDED OPTIONAL LARGE FRAME FOR TERMINAL COMPARTMENT	5/7/2021	RK
C	REMOVED SHAFT SIZES FROM BOM	5/20/2021	RK
D	REPLACED MAST ARM HARDWARE WITH RO-CAP ASSY HARDWARE	7/28/2021	RK

MATERIAL SPECIFICATIONS	
POST: ASTM A572 GR55	
BASE PLATE: ASTM A709 GR36	
MAST ARM: ASTM A572 GR55	
MOUNTING PLATE: ASTM A709 GR36	
HARDWARE FINISH: ASTM A153	
ANCHOR BOLTS: F1554 GR55	

DESIGN CRITERIA	
2013W/2015 INTERIM REVISIONS AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS ON HIGHWAY SIGNS, LUMINAIRES & TRAFFIC SIGNALS. APPENDIX C: YES	
WINDS: 80 MPH 1.3	VORTEX SHED: N/A
FATIGUE CAT: 2	GALLOPING: N/A
NATURAL WIND GUST: YES	TRUCK GUST: N/A

WELD SPECIFICATION	
THE POST AND MAST ARM TO BE ROUND TAPERED TUBE FABRICATION WITH ONE SUBMERGED ARC LONGITUDINAL SEAM WELD WITH 100% PENETRATION 6" FROM BASE PLATE AND 60% FOR REMAINDER. GAS METAL ARC WELDING PROCESS WITH 60% PENETRATION MAY BE USED FOR REMAINDER OF WELDED FABRICATION.	
WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT > 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).	

FINISH SPECIFICATION	
GALV. OR PRIME COAT:	HOT DIP GALV PER ASTM A123
FINISH COAT:	N/A
COLOR:	N/A
FEDERAL OR RAL SPEC.:	-
WEIGHT W/GALV.:	-
WEIGHT W/GALV. & PAINT:	-
SURFACE AREA:	-
GAL. OF PAINT:	-

MILLERBERND 622 6TH ST. SO. WINSTED, MN 55395

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SALES ORDER NO.:	QTY:	STATE:	SHEET
		VA	1 OF 2

DESCRIPTION:
MP3 POLE TYPE C & F DUAL MASTARMS (MAX 130')
80 MPH STANDARD QPL DESIGN

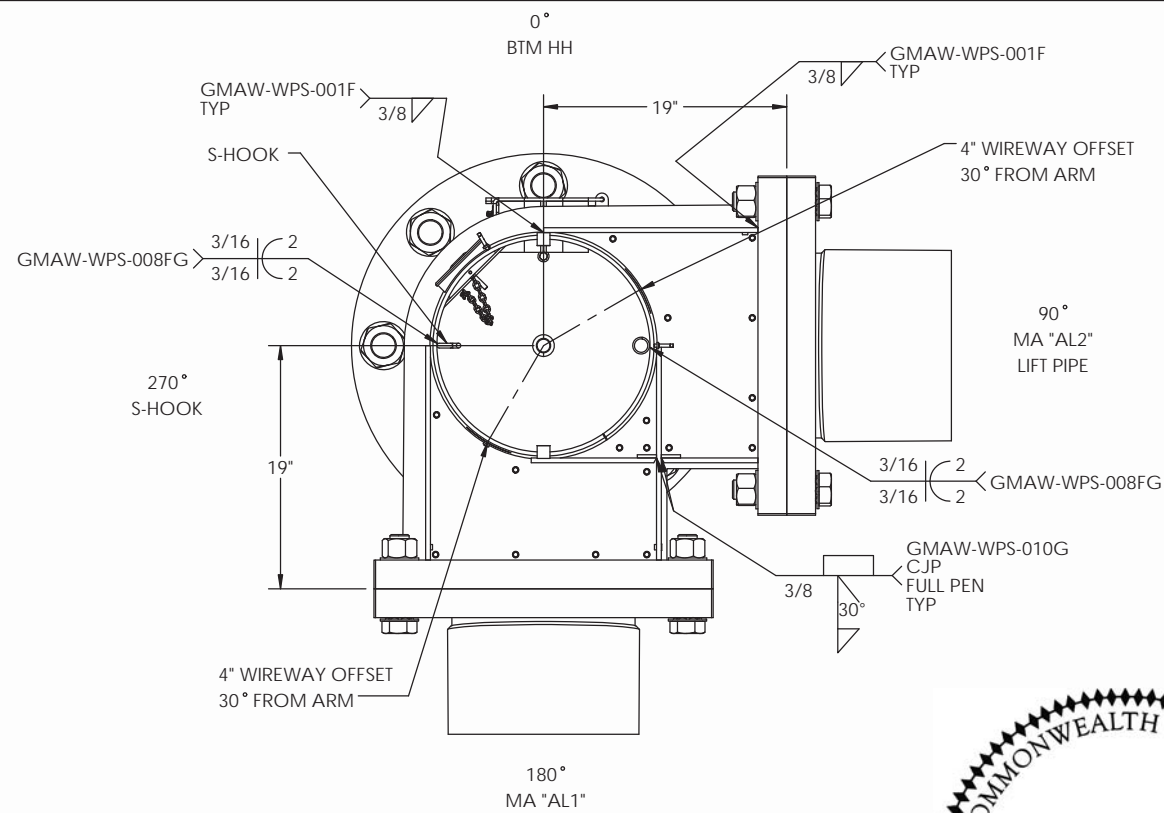
EST. WEIGHT:	DRAWING NO:
	VA8DA-70-60C(F)

PROJECT NAME:

PROJECT LOCATION:
VA

DWN BY: REBEKAH	DATE: 04-30-2020
CHK BY:	DATE:

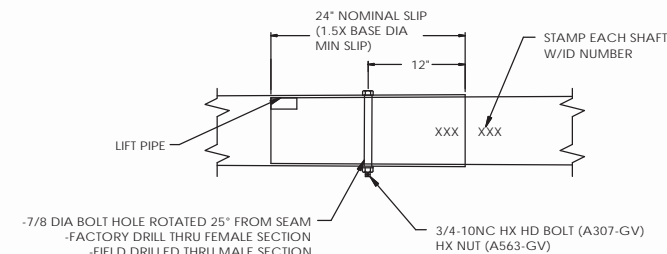
ITEM NO.	DESCRIPTION	QTY PER	ASSY	FINISH
1	ID TAG VA DOT	4	X	
2	WLDMT ARM SIG RD S2	1		X
3	WLDMT ARM SIG RD S1	1		X
4	WLDMT ARM SIG RD S2	1		X
5	WLDMT ARM SIG RD S1	1		X
6	WLDMT POLE TW SIG RD 5	1		X
7	COVER 14 x 16 HANDHOLE	1	X	
8	BENT HANDHOLE HINGE (KYDOT)	1	X	
9	GASKET HH M16	1	X	
10	COVER HH M16 4X6	1	X	
11	LATCH HH M16 4X6	1	X	
12	STAMPED POLE CAP WELDMENT (5.75-6.75)	1		X
13	STAMPED POLE CAP WELDMENT (7.75-8.75)	1		X
14	STAMPED POLE CAP WELDMENT (16.25-17.75)	1		X
15	BOLT HX HD 3-4-10NC X 12-1-2 A307GV	1		
16	BOLT HX HD 3-4-10NC X 14" A307GV	1		
17	BOLT HX HD 3-8-16NC X 3-4 F593C SS	1	X	
18	ASSY RCP BOLT 1 1/2X6-3-4" A325GV W/NUT HVYHX A563 & FLWSH-WSH-LD GV	16		
19	CHAIN 1/8"PROOF COIL CHAIN GV 12"LG	1	X	
20	STICKER-TITE SPONGE GASKET 1/2x1/8	1	X	
21	1"ID,1-3/4OD,5/8TKw/GRV 1/4/1.38GVD	16	NOT SHOWN	
22	NUT HX 3-4-10NC G5 GV	2		
23	PLUG NON THREADED K-8 CAPLUG	23	X	
24	RIVET POP 3/16X1-1/8X5/8 HD ALUM	1	X	
25	SCRWA HX SK FL HD 5-16-18NC X 3 SS	1	X	
26	WING SCREW 1/4-20X3/4 ZINC	2	X	
27	SCRW ST SQ HD 1-4-20NC X 1 1-4 SS	9		
28	SCRW HX SK BT HD 10-24NC X 5-8 SS	2	X	
29	U-DRIVE SCRW 3/16(DRIVE IN TYPE)F1941M ZC	8	X	
30	WASHER FLAT 1/4 SS FENDER WASHER	2	X	
31	WASHFLAT3-8BRASS-001	2	X	
32	ANCHOR BOLT CLUSTER (8) 2" X 66" BOLTS ON 25" BC	1		



POLE DATA		
POLE TYPE	"PH" POLE HEIGHT	POLE SIZE
C	19'-6"	5/16 X 20.0 X 17.27 X 19'-6"
F	25'-0"	5/16 X 20.0 X 16.50 X 25'-0"

LOWER HH CONFIGURATION
6X8 HINGED
TERMINAL COMPARTMENT FRAME

MAST ARM DATA			
"AL" ARM LENGTH	S1 ARM SIZE	S2 ARM SIZE	"AR" ARM RISE
30'-0"	3/16 X 10.0 X 5.80 X 30'-0"	---	2°
40'-0"	3/16 X 10.0 X 4.40 X 40'-0"	---	2°
49'-0"	3/16 X 10.0 X 5.14 X 49'-0"	---	2°
60'-0"	1/4 X 15.0 X 12.20 X 20'-0"	3/16 X 13.11 X 7.23 X 42'-0"	2°
65'-0"	1/4 X 16.0 X 13.20 X 20'-0"	3/16 X 14.11 X 7.53 X 47'-0"	2°
70'-0"	5/16 X 15.0 X 10.80 X 30'-0"	3/16 X 11.71 X 5.83 X 42'-0"	3°



DETAIL- MASTARM SLIP JOINT

POLES ARE DESIGNED TO SUPPORT A MAXIMUM ARM LENGTH COMBINATON OF 130' PER V.DOT STANDARDS

ORDER CONFIGURATION			
POLE TYPE	HH CONFIGURATION	AL1 ARM LENGTH	AL2 ARM LENGTH

PROJECT:						
MFG: MMC SO#						
MFG DATE:						
POLE NUMBER:						
MAST ARM TWIN / DUAL SIGNAL POLE						
○	POST:	GA/	DIA/	FT/	○	
MASTARM:						
	DEG S1-	GA/	DIA/	FT/S2-	GA/	DIW FT
	DEG S1-	GA/	DIW	FT/S2-	GA/	DIW FT
	MIN YIELD: (A)	55	(BP)	36	(P)	55 (ARM) 55
ANCHOR BOLTS						
	ASTM	F1554	GRV	55	DIW	2" LG 66"

ID TAG

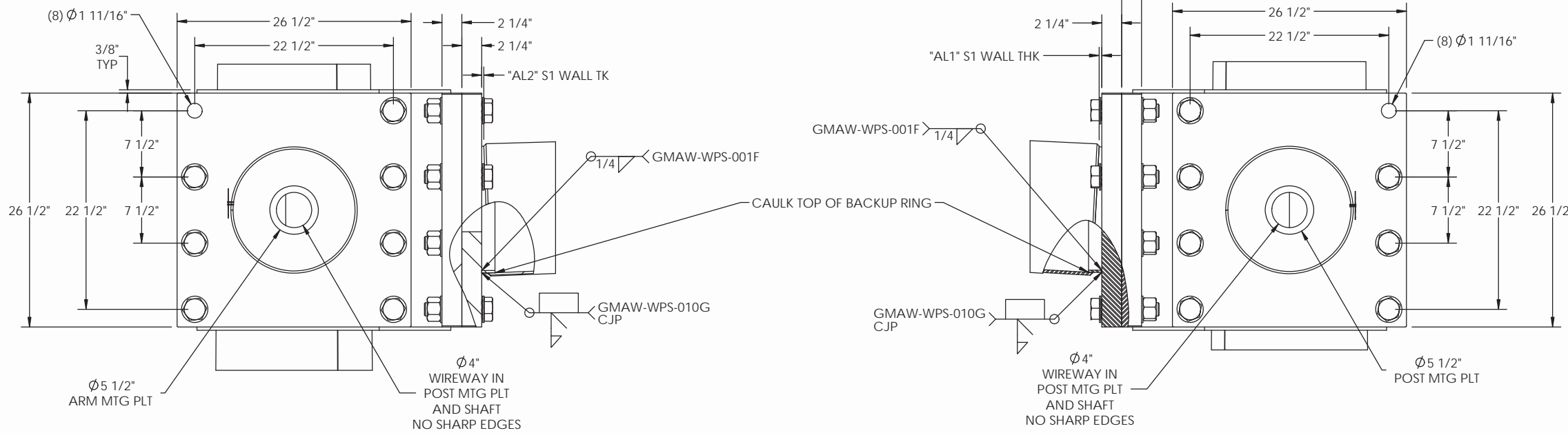
VIRGINIA DEPARTMENT OF TRANSPORTATION
C.O. STRUCTURE AND BRIDGE
REVIEW OF WORKING DRAWINGS

Working drawings have been reviewed in accordance with Section 105.10 of the Specifications with the following comments.

Reviewed Revise and Resubmit

Reviewed as Noted

Reviewed by: Karl Larson 10/19/2021



"AL1" MASTARM MTG PLT AND "AL2" WELD DETAIL

"AL2" MASTARM MTG PLT AND "AL1" WELD DETAIL

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SALES ORDER NO.:	QTY:	STATE:	SHEET
		VA	2 OF 2

DESCRIPTION:
MP3 POLE TYPE C & F DUAL MASTARMS (MAX 130')
80 MPH STANDARD QPL DESIGN

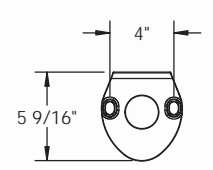
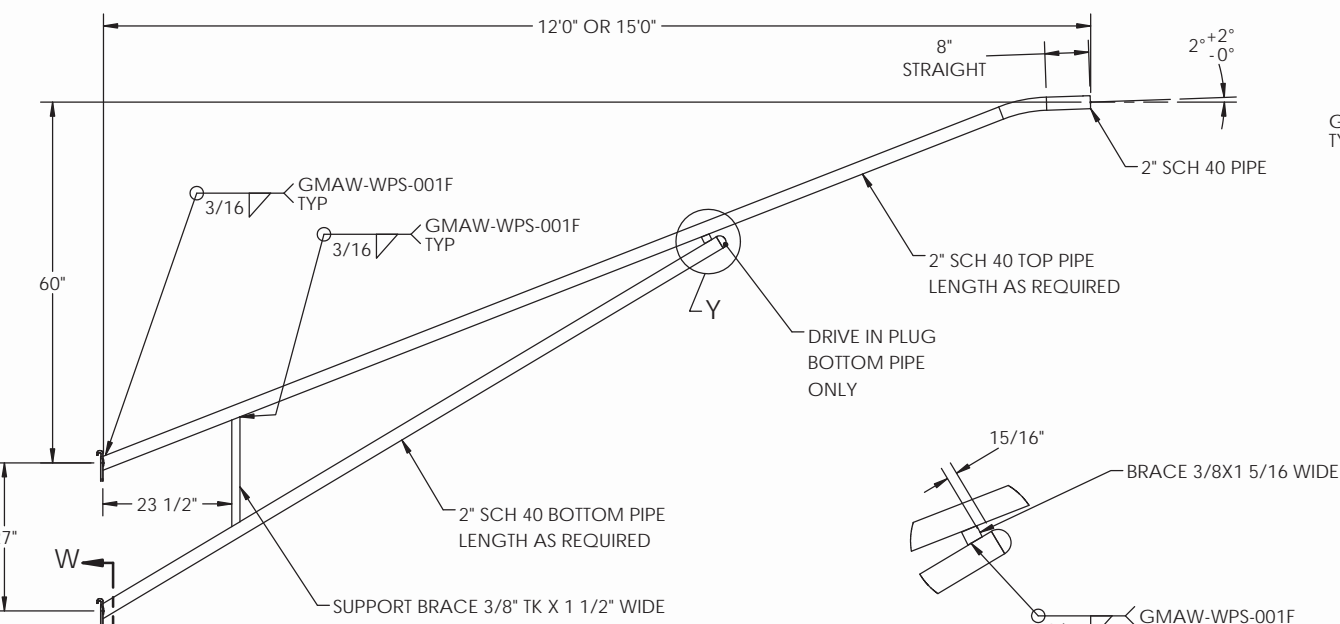
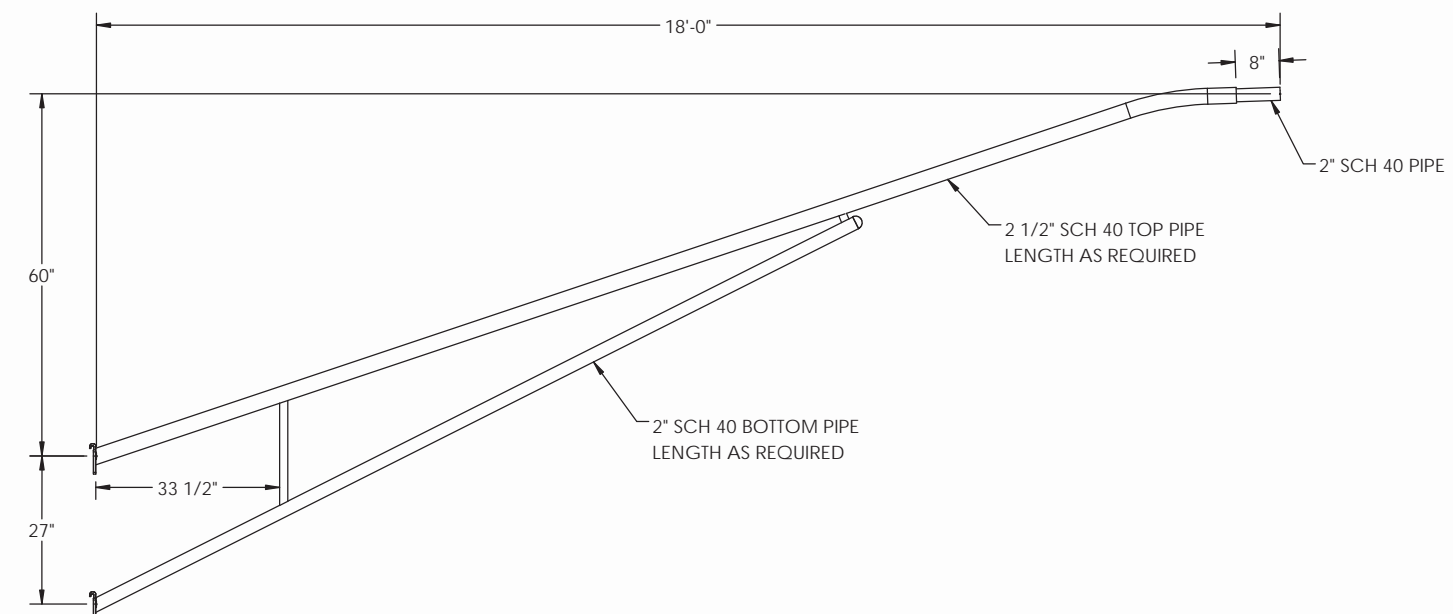
EST. WEIGHT:	DRAWING NO:
	VA8DA-70-60C(F)

PROJECT NAME:

PROJECT LOCATION: VA

DWN BY: REBEKAH	DATE: 04-30-2020
CHK BY:	DATE:

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT



SECTION W-W
SCALE 1 : 12

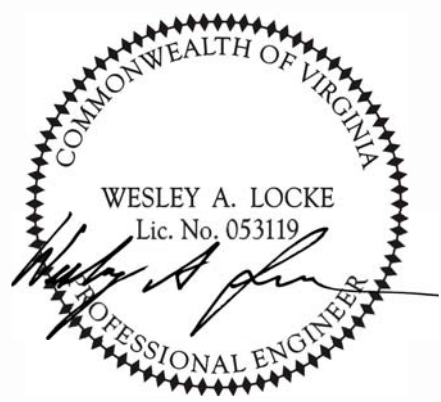
POLE DATA		
QTY	POLE TYPE	LUM ARM LENGTH 12'-0" / 15'-0" / 18'-0"
	D	
	E1	
	F	

VIRGINIA DEPARTMENT OF TRANSPORTATION
C.O. STRUCTURE AND BRIDGE
REVIEW OF WORKING DRAWINGS

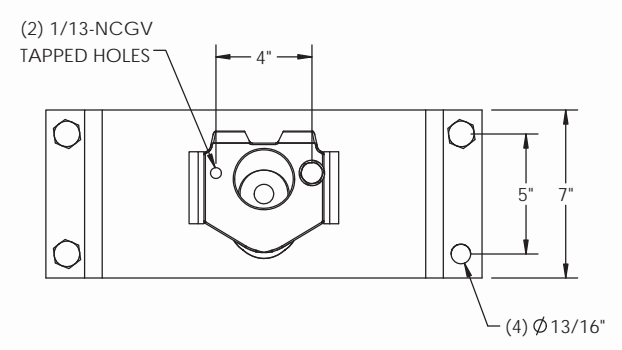
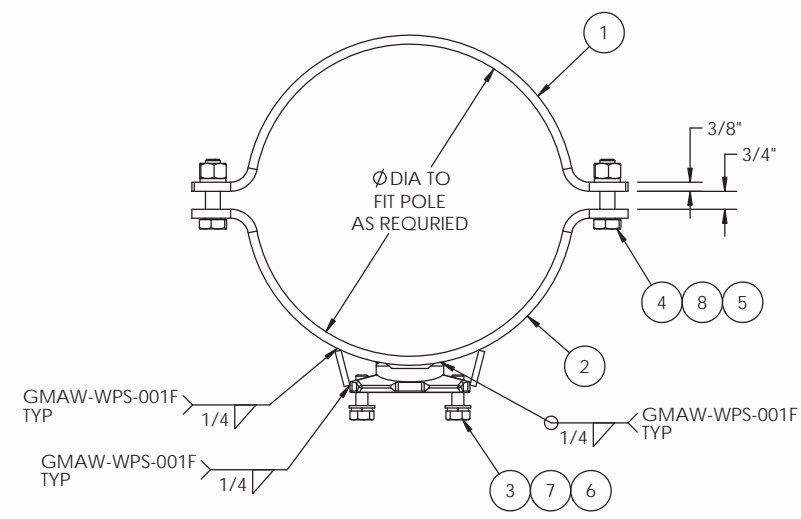
Working drawings have been reviewed in accordance with Section 105.10 of the Specifications with the following comments.

Reviewed Revise and Resubmit
 Reviewed as Noted

Reviewed by: Karl Larson 10/19/2021



10/4/21



ITEM NO.	DESCRIPTION	QTY PER	ASSY	FINISH
1	CLAMP BCK LUM 3/8X7"	1		X
2	WLDMT CLAMP FRT 2 BS 3/8 X 7"	1		X
3	BOLT HVYHXHD 1-2-13NC X 1-1-2 A325 GV	2		
4	BOLT HVYHXHD 5-8-11X2-1-2L A325GV	4		
5	NUT HVY HX 5-8-11NC A563 GV(DH)	4		
6	WASHER FLAT 1/2 GV	2		
7	WASHER LOCK 1/2 GV	2		
8	WASHER LOCK 5/8 ASTM F436 GV	4		

MATERIAL SPECIFICATIONS	
POST:	
BASE PLATE:	
MAST ARM:	
MOUNTING PLATE:	
LUMINAIRE ARM:	ASTM A500
HARDWARE FINISH:	ASTM A153
ANCHOR BOLTS:	SIZE:

DESIGN CRITERIA	
2013 W/2015 INTERIM REVISIONS AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS ON HIGHWAY SIGNS, LUMINAIRES & TRAFFIC SIGNALS.	
WINDS: MPH	APPENDIX C: YES
FATIGUE CAT: N/A	VORTEX SHED: N/A
NATURAL WIND GUST: N/A	GALLOPING: N/A
	TRUCK GUST: N/A

WELD SPECIFICATION	
THE POST AND MAST ARM TO BE A TAPERED TUBE FABRICATION WITH ONE SUBMERGED ARC LONGITUDINAL SEAM WELD WITH 100% PENETRATION 6" FROM BASE PLATE AND 60% FOR REMAINDER. GAS METAL ARC WELDING PROCESS WITH 60% PENETRATION MAY BE USED FOR REMAINDER OF WELDED FABRICATION.	
WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT) BASED ON THE THINNEST MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS. < 6MM (0.25 IN) MT > 6MM (0.25 IN) UT A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).	

FINISH SPECIFICATION	
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123	
FINISH COAT:	
COLOR:	
FEDERAL OR RAL SPEC.:	
WEIGHT W/GALV.:	
WEIGHT W/GALV.&PAINT:	
WEIGHT W/PAINT:	
SURFACE AREA:	
GAL. OF PAINT:	

FINISH SPECIFICATION	
GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123	
FINISH COAT:	
COLOR:	
FEDERAL OR RAL SPEC.:	
WEIGHT W/GALV.:	
WEIGHT W/GALV.&PAINT:	
WEIGHT W/PAINT:	
SURFACE AREA:	
GAL. OF PAINT:	



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SALES ORDER NO.:	QTY:	STATE:	SHEET
		VA	1 OF 1

DESCRIPTION: 2 BOLT SIMPLEX LUM ARM
STANDARD QPL DESIGN

EST. WEIGHT:	DRAWING NO:
	VA9SA-LUM

PROJECT NAME:

PROJECT LOCATION:

DWN BY: REBEKAH	DATE: 5/7/2020
CHK BY:	DATE: